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# DESCRIPTION OF INVENTION

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### **(54) METHOD OF FIXATION OF FEMORAL BONE FRAGMENTS AFTER INTERTROCHANTERIC AND SUBTROCHANTERIC CORRECTIVE OSTEOTOMY**

The present invention refers to medicine, specifically to orthopedics.

A known method exists for fixation of bone fragments after intertrochanteric and subtrochanteric corrective osteotomy with two metal plates [1].

However, plate fixation according to the known method may leave a diastasis, which slows down consolidation and prevents muscular compression.

The purpose of the present invention is to create muscular compression.

In order to achieve this purpose, proximal ends of the plates are placed to form a fork on the outer and inner surfaces of the cortical layers of the proximal fragment and distal ends are placed one over the other on the outer surface of the distal fragment and attached to each other and to the bone with screws.

The method is as follows.

Proximal and distal fragments are fixed with two plates; one end of the first plate is inserted

adjacent to the internal cortical layer of the proximal femur; the other end is inserted adjacent to the external cortical layer of the distal fragment. In order to prevent rotational shift, a groove is cut on the internal surface of the proximal fragment and on the external surface of the distal fragment at an angle of 45° by plate width. The other plate is placed externally on the proximal fragment, apertures on both plates are aligned, and both plates are attached to the distal fragment with screws. Proximal fragment of the bone is not fixed with screws in order to maintain axial mobility. This results in gluteal muscles abducting the proximal fragment of the femur and adductant muscles adducting the distal fragment; therefore, axial muscular compression is created, diastasis between fragments is eliminated and consolidation is accelerated.

Unlike other methods, this method does not compromise integrity of the intramedullary canal.

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Testing demonstrated that this method provided permanent muscular compression between the proximal and distal fragments ensuring elimination of the diastasis, often seen with other types of plates and fixation devices attached to both fragments, which sometimes caused formation of false joints. Furthermore, the present method of fixation prevents rotation shifts of the fragments while maintaining the axial muscular compression of the bone fragments.

*Summary of Invention*

A method of fixation of femur fragments following intertrochanteric and subtrochanteric

corrective osteotomy with two metal plates, *distinguished* by ensuring muscular compression by placement of the plates in such a way, that proximal ends of the plates form a fork on the internal and external surfaces of the cortical layer of the proximal fragment, while distal ends are placed one over the other on the external surface of the distal fragment and attached to each other and to the bone with screws.

Sources of information considered for expert evaluation:

1. Volkov M.V., Ter-Yegiazarov G.M., Yukina G.P. Congenital Hip Dislocation.- Moscow.: Meditsina, 1972, page 11.

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